2. (Previously Amended) An n-type semiconductor diamond as set forth in claim 1, characterized in that at a room temperature it has a carrier concentration not less than $1.4x10^{-13}$ cm^{-3} and a carrier mobility not less than 580 $cm^2V^{-1}s^{-1}$.

3. **(Three times Amended)** A method of making an n-type semiconductor diamond, characterized in that it comprises:

mechanically polishing a diamond substrate to make it in an inclined diamond substrate, which is formed by mechanically polishing a diamond (100) face oriented substrate so that its face normal is inclined at an angle between 1.5 and 6 degrees with respect to its <100> direction in a plane made by either its <100> and <010> directions or its <100> and <001> directions;

subjecting a surface of said inclined diamond substrate to a smoothening treatment make it eve **:; and**

exciting a raw material gas made of a volatile hydrocarbon compound, a sulfur compound and a hydrogen gas by a microwave plasma while maintaining at a given temperature said substrate surface smoothened as aforesaid to cause n-type semiconductor diamond to grow epitaxially on said smoothened substrate;

wherein said n-type semiconductor diamond exhibits crystal completeness sufficient to allow operation of said n-type semiconductor diamond as p-n junction device.

4. (Previously Amended) A method of making an n-type semiconductor diamond as set forth in claim 3, characterized in that said diamond substrate is a diamond (100) face oriented substrate.

6. (Previously Twice Amended) A method of making an n-type semiconductor diamond as set forth in claim 3, characterized in that said smoothening treatment comprises a treatment of exposing said inclined substrate to the hydrogen plasma of a hydrogen pressure of 10 to 50 Torr and

a microwave output of 200 to 1200 W at a substrate temperature of 700 to 1200 °C for a period of 0.5 hours to 5 hours, thereby to make even said substrate surface to consist of steps each in the order of an atomic layer.

7. (Previously Twice Amended) A method of making an n-type semiconductor diamond as set forth in claim 3, characterized in that said given substrate temperature is between 700 and 1100°C.

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20. (Previously added) A method of making an n-type semiconductor diamond as set forth in claim 7, characterized in that said given substrate temperature is 830°C.